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In the Claims:

1. (currently amended) A method for monitoring a network comprising:

receiving at least one data packet;

reading an entry of a memory device, the entry of the memory device containing both a first statistical value and a second statistical value, wherein the entry is a single memory location of the memory device, wherein the first statistical value includes a packet count, and wherein the second statistical value includes a byte count;

determining a third statistical value based on at least one of a content of the at least one data packet, the first statistical value, and the second statistical value, wherein the third statistical value includes a new value of the packet count and a new value of the byte count; and

storing the entire set of bits of the determined third statistical value into the entry of the memory device; and

wherein said reading, determining and storing are performed without interruption.

2. (original) The method of claim 1,

wherein the at least one data packet contains a set of data bits,

wherein the first statistical value includes a count of the received at least one data packet, and

wherein the second statistical value includes a count of a subset of data bits of the received at least one data packet.

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3. (original) The method of claim 1,

wherein storing the determined third statistical value in the entry of the memory device overwrites one of the first statistical value and the second statistical value.

4. (original) The method of claim 1, wherein the at least one data packet comprises at least one of SONET, ATM, Ethernet, HDLC, PPP, IP, TCP, and UDP data packet.

5. (original) The method of claim 1, wherein the third statistical value comprises updates to at least one of the first statistical value and the second statistical value.

6. (original) The method of claim 5, wherein the third statistical value updates at least one of the first statistical value and the second statistical value by at least one of incrementing and decrementing the first statistical value and the second statistical value, respectively, by a value.

7. (original) The method of claim 5, wherein the third statistical value updates at least one of the first statistical value and the second statistical value by adding a value to the first statistical value and the second statistical value, respectively.

8. (original) The method of claim 7, wherein the value comprises a negative value.

9. (original) The method of claim 1, wherein the entry of the memory device is associated with the received data packet.

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10. (original) The method of claim 2, wherein the subset of data bits of the received data packet comprises 8 data bits of the received data packet.

11. (previously presented) The method of claim 5, wherein the third statistical value updates at least one of the first statistical value and the second statistical value by correcting an error in the at least one of the first statistical value and the second statistical value.

12. (currently amended) An apparatus for monitoring a network comprising:

a receiver configured to receive at least one data packet;

an entry of a memory device configured to store both a first statistical value and a second statistical value, wherein the entry is a single memory location of the memory device, wherein the first statistical value includes a packet count, and wherein the second statistical value includes a byte count;

a processor coupled to the receiver and the memory device, the processor being configured to read the first statistical value and the second statistical value from the entry, determine a third statistical value based on at least one of a content of the at least one data packet, the first statistical value, and the second statistical value, wherein the third statistical value includes a new value of the packet count and a new value of the byte count, and to store the entire set of bits in the third statistical value into in the entry of the memory device, wherein the reading of the first and the second statistical values from the entry, the determining of the third statistical value, and the storing of the third statistical value in the entry are performed without interruption.

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13. (original) The apparatus of claim 12,

wherein the at least one data packet contains a set of data bits, wherein the first statistical value includes a count of the received at least one data packet, and

wherein the second statistical value includes a count of a subset of data bits of the received at least one data packet.

14. (original) The apparatus of claim 12, wherein storing the third statistical value in the entry of the memory device overwrites one of the first statistical value and the second statistical value.

15. (original) The apparatus of claim 12, wherein the at least one data packet comprises at least one of SONET, ATM, Ethernet, HDLC, PPP, IP, TCP, and UDP data packet.

16. (original) The apparatus of claim 12, wherein the third statistical value comprises updates to at least one of the first statistical value and the second statistical value.

17. (original) The apparatus of claim 16, wherein the third statistical value updates at least one of the first statistical value and the second statistical value by at least one of incrementing and decrementing the first statistical value and the second statistical value, respectively, by a value.

18. (original) The apparatus of claim 16, wherein the third statistical value updates at least one of the first statistical value and the second statistical value by adding a value to the first

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statistical value and the second statistical value, respectively.

19. (original) The apparatus of claim 18, wherein the value comprises a negative value.

20. (original) The apparatus of claim 12, wherein the entry of the memory device is associated with the data packet.

21. (original) The apparatus of claim 13, wherein the subset of data bits of the received data packet comprises 8 data bits of the received data packet.

22. (original) The apparatus of claim 16, wherein the third statistical value updates at least one of the first statistical value and the second statistical value by correcting an error in the at least one of the first statistical value and the second statistical value.

23. (currently amended) A computer-readable medium encoded with a program for a computer, the program comprising:

receiving at least one data packet;

reading an entry of a memory device, the entry of the memory device containing both a first statistical value and a second statistical value, wherein the entry is a single memory location of the memory device, wherein the first statistical value includes a packet count, and wherein the second statistical value includes a byte count;

determining a third statistical value based on at least one of a content of the at least

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one data packet, the first statistical value, and the second statistical value, wherein the third statistical value includes a new value of the packet count and a new value of the byte count; and
storing the entire set of bits in the determined third statistical value into ~~in~~ the entry of the memory device; and
wherein the reading, determining and storing are performed without interruption.

24. (original) The computer-readable medium of claim 23, wherein the at least one data packet contains a set of data bits, wherein the first statistical value includes a count of the received at least one data packet, and wherein the second statistical value includes a count of a subset of data bits of the received at least one data packet.

25. (original) The computer-readable medium of claim 23, wherein storing the determined third statistical value in the entry of the-memory device overwrites one of the first statistical value and the second statistical value.

26. (original) The computer-readable medium of claim 23, wherein the at least one data packet comprises at least one of SONET, ATM, Ethernet, HDLC, PPP, IP, TCP, and UDP data packet.

27. (original) The computer-readable medium of claim 23, wherein the third statistical value comprises updates to at least one of the first statistical value and the second statistical value.

28. (original) The computer-readable medium of claim 27, wherein the third statistical value

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updates at least one of the first statistical value and the second statistical value by at least one of incrementing and decrementing the first statistical value and the second statistical value, respectively, by a value.

29. (original) The computer-readable medium of claim 27, wherein the third statistical value updates at least one of the first statistical value and the second statistical value by adding a value to the first statistical value and the second statistical value, respectively.

30. (original) The computer-readable medium of claim 29, wherein the value comprises a negative value.

31. (original) The computer-readable medium of claim 23, wherein the entry of the memory device is associated with the received data packet.

32. (original) The computer-readable medium of claim 24, wherein the subset of data bits of the received data packet comprises 8 data bits of the received data packet.

33. (original) The computer-readable medium of claim 27, wherein the third statistical value updates at least one the first statistical value and the second statistical value by correcting an error in the at least one of the first statistical value and the second statistical value.

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34. (previously presented) The method of claim 1, further comprising reading said single memory location following said storing, and, in the event that said third statistical value comprises a negative value, writing a predetermined value to said single memory location.

35. (previously presented) The method of claim 34, wherein said predetermined value comprises all zeros.

36. (previously presented) The apparatus of claim 12, wherein said processor is further configured to read said single memory location following storing of said third statistical value, and, in the event that said third statistical value comprises a negative value, write a predetermined value to said single memory location.

37. (previously presented) The apparatus of claim 36, wherein said predetermined value comprises all zeros.

38. (previously presented) The computer-readable medium of claim 23, wherein said program further comprises:

reading said single memory location following said storing, and, in the event that said third statistical value comprises a negative value, writing a predetermined value to said single memory location.

39. (previously presented) The computer-readable medium of claim 38, wherein said predetermined value comprises all zeros.